
Insulin Delivery Technology to Control Glucose Levels During Pregnancy



An international study has shown that new insulin delivery technology significantly improves glucose control during pregnancy for people with Type 1 diabetes, a crucial factor for the health of both mother and baby.

For pregnant women with Type 1 diabetes, maintaining glucose within a healthy range is vital for both maternal and foetal health. Even with dedicated support, achieving optimal blood glucose in pregnancy is exceptionally challenging for those with Type 1 diabetes. Type 1 diabetes in pregnancy carries increased risks, including miscarriage, preeclampsia, and other serious complications. Infants are more likely to be born large or preterm, have low blood glucose at birth, and face a higher risk of congenital anomalies.

The technology, called automated insulin delivery (AID), functions like a healthy pancreas by continuously adjusting insulin doses in real time based on current and predicted glucose levels.

Published in *JAMA*, the trial compared a hybrid closed-loop (HCL) insulin therapy system with standard insulin injections or a non-automated pump, both used alongside continuous glucose monitoring. The system evaluated was the Tandem t:slim X2 insulin pump with Control-IQ technology.

It has long been known that AID systems improve glucose control for non-pregnant individuals with Type 1 diabetes, but their use in pregnancy hasn't been thoroughly examined. Most AID systems weren't designed to meet the tight glucose targets needed during pregnancy or to keep up with rapidly changing insulin requirements.

Participants using the AID system spent more time within healthy glucose levels and less time above or below target. Improvements appeared immediately and continued throughout pregnancy, with consistent results across all 14 study sites in Canada and Australia.

This study showed the AID system is effective in pregnancy. Women using the system spent an average of three additional hours per day within the target glucose range compared with standard therapy. That's significant because every 72-minute increase in time-in-range during pregnancy has been associated with reduced newborn complications.

These findings will help guide individuals who are pregnant or planning pregnancy by showing how this AID system can support better glucose control and potentially better pregnancy outcomes.

Source: [University of Calgary](#)

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